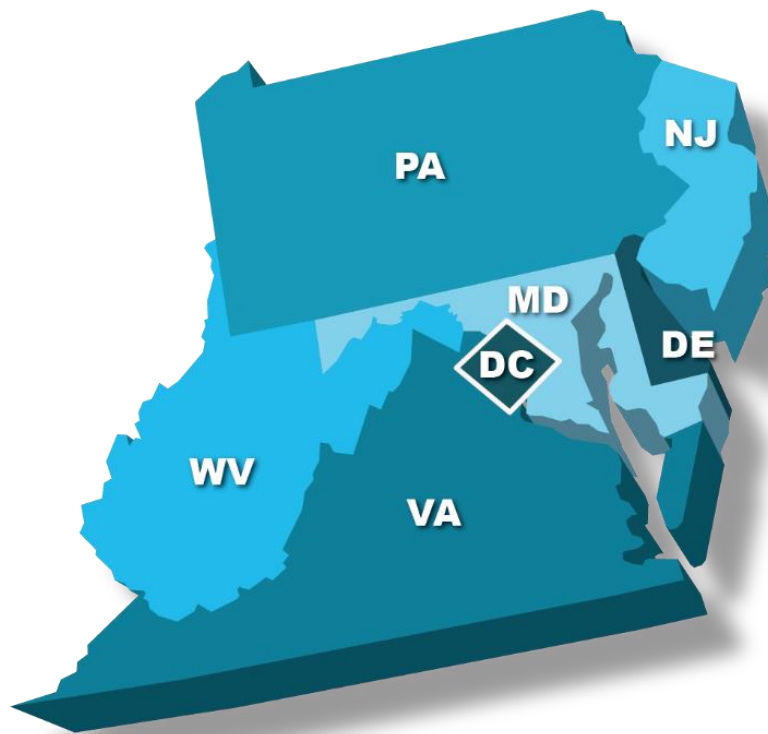




# FHWA Mid-Atlantic Megaregion Workshop

December 6, 2016  
King of Prussia, PA



Final Report—July 2017



U.S. Department of Transportation  
**Federal Highway Administration**



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## INTRODUCTION

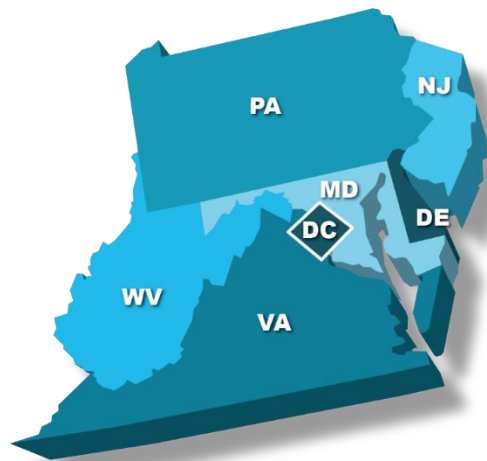
This document summarizes the December 6, 2016, Mid-Atlantic Megaregion Workshop titled “Are We Ready for the Rise of the Megaregion?” The Workshop brought together local, State, and Federal transportation decisionmakers to identify how States, MPOs, and other planning partners can better connect with each other, coordinate statewide freight plan development, and identify common approaches to address traffic congestion and aging infrastructure at a megaregion level. The Workshop took place in King of Prussia (Greater Philadelphia), Pennsylvania.

This report summarizes the Workshop presentations and discussions. appendix A presents the Workshop agenda; appendix B contains the Mid-Atlantic White Paper; appendix C contains key contacts; and appendix D contains a list of participants.

## OVERVIEW OF THE MID-ATLANTIC MEGAREGION WORKSHOP

The Federal Highway Administration (FHWA) and the Delaware Valley Regional Planning Commission (DVRPC) hosted a Workshop focused on the Mid-Atlantic Megaregion. For the purposes of this Workshop, the FHWA defines the Mid-Atlantic Megaregion (shown in the adjacent map) as comprised of Delaware, Maryland, Pennsylvania, New Jersey, Virginia, West Virginia, and the District of Columbia. More information about megaregions can be found on FHWA’s [Megaregion Web site](#).

Transportation officials and planning representatives explored emerging trends, new technologies, planning practices, and opportunities for multijurisdictional coordination. Topics of the Workshop include activities and perspectives of the I-95 Corridor Coalition, current freight planning efforts for States and MPOs in the Megaregion, connected and autonomous vehicles, and freight planning provisions of the Fixing America’s Surface Transportation ACT (FAST).



**Figure 1. Map. Mid-Atlantic Megaregion.**  
(Source: Cambridge Systematics, Inc.)

## PART 1—SETTING THE STAGE

### OPENING REMARKS

#### **Renee Sigel, Division Administrator, Pennsylvania Division, Federal Highway Administration**

Ms. Sigel opened the Workshop by welcoming participants to King of Prussia and emphasized the importance of collaboration for the Mid-Atlantic Megaregion. Ms. Sigel provided an overview of each speaker for the event.



### **Leslie Richards, Secretary, Pennsylvania Department of Transportation**

Secretary Richards began her remarks by stressing the importance of working with Pennsylvania’s neighbors, no matter the distance, due to the nature of 21<sup>st</sup> Century logistics and freight movement. She noted that transportation, like water and air, does not stop at jurisdictional boundaries and that participants in the Workshop need to work together to enhance our region. Secretary Richards mentioned that Pennsylvania is part of the first, multistate, autonomous vehicle corridor in the nation, which will expand from Michigan to Pennsylvania, and added that 7.5 percent of all commerce in the United States crosses Pennsylvania.

### **Martin Knopp, Federal Highway Administration Director of Field Services North**

Mr. Knopp stated that researchers identify several megaregions in the United States. Megaregions represent approximately 75 percent of the U.S. population. Coordination across jurisdictional boundaries does not require a statute in law, but a passion in planning. He noted that a lack of coordination can have severe consequences and expressed his excitement for the Workshop discussions.

### **Barry Seymour, Executive Director, Delaware Valley Regional Planning Commission**

Mr. Seymour discussed the challenges of planning across State and county lines at DVRPC. He noted that Philadelphia is familiar with megaregional planning, as the metropolitan area can be identified with the Mid-Atlantic Megaregion and the Northeast Megaregion. Mr. Seymour discussed the “3 Cs” for megaregions: Coordination, Communication, Consultation, and how each is important for a megaregion to succeed.

## **STARTING THE CONVERSATION: ARE WE READY FOR THE RISE OF THE MEGAREGION?**

### **Catherine Ross, Director of the Center for Quality Growth and Regional Development at Georgia Institute of Technology**

Dr. Ross gave a presentation titled “Are We Ready for the Rise of the Megaregion?” in which she defined the concept of megaregions, explained their importance, discussed the leadership behind U.S. megaregion initiatives, and provided insight into the unique characteristics of the Mid-Atlantic Megaregion. Dr. Ross suggested a key question is “How do we get ready for the megaregion?” She raised additional questions to be addressed throughout the day:

- What would a megaregion action plan look like?
- What is the Workshop objective?
- Where do we want to be at the end of the Workshop today?
- What should be connected if we erase jurisdictional boundaries in the Mid-Atlantic Megaregion?

Participants asked the following questions:

- In looking at the maps shown during the presentation, should we expand the Mid-Atlantic Megaregion to Boston? The maps appear to show that the majority of the megaregion population is served by ports and airports that are north of Philadelphia.





- FHWA research identifies 13 defined megaregions; however the concept is fluid. The important point is that there are significant connections that cross boundaries, and that it is important we identify these connections to other megaregions.
- How are we incorporating autonomous vehicles, including trucks, into the transportation planning process?
  - There is a lot of conceptual research underway at National, State, and local levels, however little has been done in the practice of integrating autonomous vehicles into the transportation planning process. The hope is to have national directives soon.

## **MEGAREGIONAL COLLABORATION: LONG-TERM TRENDS AND DEMANDS IN THE MID-ATLANTIC**

### **Regina Aris, Deputy Director of Transportation Planning, Baltimore Metropolitan Council**

Ms. Aris provided thoughts on behalf of the Association of Metropolitan Planning Organizations (AMPO). She noted that megaregions are about strategy and placement of infrastructure, and that AMPO supports “smart planning” efforts where community cohesion and local voices are a key part of the megaregion transportation planning process. To the extent regions and States can align transportation visions and goals to the benefit of a larger megaregion, it makes sense for MPOs to do so. Examples of this practice include working with informal or semiformal coalitions, establishing or updating memorandums of understanding, increased coordination in the development of transportation plans and programs, data sharing, and use of common or shared planning tools. Some examples of transportation topics that have traditionally adhered to megaregion principles include emergency preparedness for natural disasters, freight, and interregional passenger travel.

Economic competitiveness also is a motivator for MPOs to work within and among States. An example includes supporting infrastructure investments to access the economic opportunity provided by shale oil deposits in the Midwest. Air quality planning organizations provide examples of interjurisdictional coordination, including the Northeast States for Coordinated Air Use Management (NESCAUM), Ozone Transport Commission (OTC), Mid-Atlantic Regional Air Management Association (MARAMA), and the Lake Michigan Air Directors Consortium (LADCO). These organizations provide forums to implement common emission controls across jurisdictional boundaries and have demonstrated success in improving air quality.

Ms. Aris reiterated that AMPO supports megaregional planning efforts. Members tend to support informal arrangements that allow flexibility around collaboration and data sharing rather than approaches with formal layers of governance, and allowing these collaborative efforts to evolve and mature on their own to suit their needs. She provided several examples of MPOs engaged in these types of activities.

### **Jeffrey Short, Senior Research Associate, American Transportation Research Institute**

Mr. Short gave a presentation on megaregions from the trucking perspective. He presented trends emerging from the private sector and discussed what public entities need to know going forward. He noted that intersection design and weight permitting should be better coordinated at the megaregion level. Mr. Short showed an analysis of a data sample depicting where 2,000 trucks originating in Philadelphia traveled over a seven day study period. Within three to five days, many trucks had traveled as far as California, Pacific Northwest States, and Canada.





Mr. Short noted the top 10 industry issues facing trucking. He identified truck parking and driver distraction as issues participants could help address. He ended his presentation noting that investment in infrastructure is critical and the trucking industry supports fuel taxes as an efficient means of revenue.

Participants asked the following questions:

- On the map of truck movement from Philadelphia, some trucks traveled as far as California. Why would they not use rail?
  - Factors include the value of the cargo and need for security.
- What data does the America Transportation Research Institute (ATRI) have for State and MPOs planning purposes?
  - ATRI has truck GPS data, performance data, origin-destination, and surveys.
- What are the industry's thoughts on congestion pricing?
  - The industry currently has a position against it; however, we are researching it further. They support High Occupancy Toll (HOT) lanes for new infrastructure.
- In urban regions and megaregions, should we be modeling truck to air to truck as well as truck to rail to truck?
  - Mr. Short said it depends on the area, but that is a good question for future research.
- In terms of autonomous vehicles, what are the trucking industry's thoughts?
  - ATRI recently released a report on autonomous vehicles and is conducting ongoing research on the topic. Hours of service issues play a key role in the topic. With highly autonomous vehicles, drivers can rest while the vehicle is moving, and may not have to park as often to meet current regulatory requirements, so there may be less need for truck rest areas and parking. Technology also can help address the industry's man-power shortage.
- New smart phone apps such as Convoy are becoming more popular. What is the impact on the industry?
  - Mr. Short stated that he has seen no changes thus far. The question is how do we fill back haul? These apps may do it more efficiently.

## MID-ATLANTIC MEGAREGIONAL FREIGHT ACTIVITIES

### Marygrace Parker, Freight, Mobility, Safety and Security Coordinator, I-95 Corridor Coalition

Mrs. Parker gave a presentation on Megaregional Freight: Understanding and Addressing Freight Mobility Challenges through Regional Cooperation. She noted that Interstate 95 (I-95) serves multiple megaregions, with 5.3 billion tons of annual freight shipments traveling through the corridor and major ports, airports, and logistic facilities along the corridor's length. She provided an overview of megaregion freight planning approaches and research, noting relevant studies done by the I-95 Corridor Coalition.



The I-95 Corridor Coalition takes a freight corridor approach for analysis and investment. Agencies typically examine freight mobility issues within their own boundaries. The Coalition acts as a liaison among State agencies to examine freight bottlenecks and identify projects that would yield improvements in freight movements across the corridor. Mrs. Parker emphasized that benefits resulting from infrastructure improvements are realized not only in the area where the improvement occurs, but also in other States and regions. Current institutional models may present challenges to implementing capital projects where benefits accrue beyond the project area. Planning models for megaregions will pose much less of a challenge than models for infrastructure selection (e.g., prioritization), investment, and implementation.

Mrs. Parker provided the following key considerations for selecting appropriate institutional options, which she referred to as “institutional design principles.”

- “Form follows function”—be clear about the purposes of the institution and which institutional capabilities are most needed in the corridor.
- No single institution may have all the capabilities needed.
- Look to existing organizations first to find and utilize needed capabilities.
- Tailor multistate transportation institutions, such as the I-95 Corridor Coalition, to their time and place—so they will fit comfortably and effectively within the prevailing political culture.
- The most important capability sought is “boundary crossing,” which is the ability to work across existing jurisdictional boundaries.

She discussed the Mid-Atlantic Rail Operations Studies as an example of a multistate coordination effort that identified specific projects. This effort includes several States, CSX, Norfolk-Southern, Amtrak, FHWA, and Federal Railroad Administration (FRA). Their objective is to examine rail bottlenecks, assess the potential for truck-to-rail diversion, and identify projects. She also discussed an initiative to develop freight performance measures that assess freight fluidity across modes and jurisdictions. As part of this initiative, a Freight Supply Chain Performance Phase II project is beginning soon with two regional pilots. The Coalition also is identifying common, future challenges, such as connected and automated trucks and platooning. From a megaregional perspective, key strategies to consider are identifying where this effort is applicable and effective, and harmonizing legislation and application of requirements across boundaries to simplify compliance.

Mrs. Parker said the organization embraces a megaregional approach along the corridor to advance activities to address freight mobility and performance. Activities include:

- Support the ability for agencies to share and utilize data economically and efficiently.
- Share best practices, identify, and enhance tools for data analysis.
- Support best practices and information exchange on regional basis for agencies advancing freight plans.
- Enhance agency access to and use of data for freight planning and performance measures, including supporting and advancing use of real time and archived probe data and analytical methods and tools.



- Develop consistent freight performance measures, including freight fluidity and multistate freight performance measures for supply chains.
- Develop relationships among staff of all levels and disciplines across jurisdictions and build capacity to address freight issues, including professional capacity development such as the Freight Academy.
- Be on the leading edge of new topics, such as emerging technologies, or pursue unpopular topics that may have promise, such as user fees.
- Continue to advance operational, institutional, and capital projects across freight corridors or across a megaregion that improve the overall transportation system for the movement of freight and passengers.

Mrs. Parker concluded her presentation with the following points:

- We need to better understand and address freight on a corridor and megaregion basis because supply chains function across multiple jurisdictions and over corridors.
- Investment decisions that do not look at the compendium of improvement projects across the Mid-Atlantic Megaregion freight corridor may leave bottlenecks and disruptions in the supply chain.
- There is a need to develop institutional models that can move beyond planning, to take projects with multistate significance and benefits “across the finish line.”

Participants asked the following questions:

- Are Public-Private-Partnerships a viable mechanism for a truck only lane or facility?
  - Yes, they would have to be short runs, possibly looking at what constitutes a segment and how big a segment needs to be to gain operational efficiencies.
- Is there a future for inland ports in urban areas?
  - Mrs. Parker said there is an opportunity. We have had challenges on the marine side for inland ports, but there are great opportunities. We are seeing a transition in how “moves” are made with time-sensitive cargo.
- What is a strategy for setting a priority?
  - Mrs. Parker reiterated the importance of understanding where the benefits of infrastructure development accrue. For example, a project in Maryland could have significant beneficial impacts in Florida. A governance board or multistate compact also is important.
- In regards to E-Z Pass, how do you take that successful system and apply it to other discussions of planning, and what made E-Z Pass so successful?
  - Mrs. Parker replied that strong leadership was key to the success of E-Z Pass. You cannot wait for everybody to be ready, just go first and do not build a platform or portfolio that excludes potential partners.



## **PART 2—CURRENT AND NEAR-TERM INITIATIVES**

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### **TAKING ACTION ON FREIGHT: A FOCUS ON ACTIVITIES FROM STATE DEPARTMENTS OF TRANSPORTATION**

Catherine Ross facilitated a round table discussion among State DOTs in the Mid-Atlantic Megaregion highlighting freight activities, statewide plans, regional plans, and efforts to prepare for the new requirements of the National Highway Freight Program. The roundtable provided information on the status of State freight plans and how to collaborate across State boundaries on freight topics within a megaregion framework.

The States and commonwealths provided the following comments.

#### **Pennsylvania Department of Transportation (PennDOT)**

Jim Ritzman reported that Pennsylvania recently released the Commonwealth's first comprehensive freight movement plan. It includes freight commodity flows, statistics, and a freight evaluation tool with an economic component as an evaluation measure. PennDOT would like to better understand how to calculate the economic impacts of freight projects. A key challenge in the Commonwealth is that while State transportation funding has seen an increase, PennDOT learned that some local municipalities are struggling financially and having difficulty with basic asset management.

#### **Maryland Department of Transportation (MDOT)**

L'Kiesha Markley reported that Maryland developed a 2015 Strategic Goods Movement Plan that focused on economics, safety, and technology. MDOT currently is updating Critical Urban and Rural Freight Corridors for FAST ACT compliance and has started the conversation with MPOs. MDOT also is coordinating with the Baltimore MPO on the Freight Demand Modeling and Data Improvement SHRP 2 project, a Comprehensive Freight Multimodal Database, and examining the vulnerability of freight flows to climate change and extreme weather impacts. Maryland plans to have 11 virtual weight stations by end of 2018.

#### **District of Columbia Department of Transportation (DDOT)**

Laura Richards reported that the District operates more like a city than a State, and is generally a consumer of goods rather than a producer. For freight, the focus is primarily on first- and last-mile issues. DDOT completed a State freight plan in 2014, and will update it in 2017 to be FAST ACT compliant. DDOT currently is finalizing a District Freight Rail Plan, developing new oversized and overweight truck rules, and created a tool for oversized and overweight vehicles, primarily to aid in routing. They also are in the midst of developing a truck signage plan, which will include restrictive signage and a move towards positive route guidance. They also are planning to charge for curbside loading zone space and implement a reservation system.

#### **Delaware Department of Transportation (DeIDOT)**

Drew Boyce reported that Delaware developed a MAP-21-compliant Delaware Freight Plan. The Plan has a strong regional component and involved working closely with MPOs, as well as with Maryland and Virginia DOTs. It has a focus on commodities—chemical, agriculture and poultry are the major industry distributors. The coordination effort allowed them to better understand how



commodity flows through each State and the associated impacts on the entire megaregion. DelDOT opened up a conversation with freight industry representatives and asked them for their needs. One simple request from industry was to keep the roads plowed during winter storms. DelDOT's next steps are to look at retail freight and secondary freight. They also are working on a FASTLANE grant application. A Port of Wilmington expansion plan is underway to improve the intermodal movement of goods.

### Virginia Department of Transportation (VDOT)

Erik Johnson reported that Virginia is in the process of working on the Long-Range Statewide Transportation Plan, VTrans 2040. VDOT's freight plan is integrated into the statewide plan. Virginia has a legislated approach to project prioritization and selection called Smartscale, whereby municipalities submit projects for review and scoring. VDOT prioritizes projects and allocates funding. The statewide plan is focused on corridors of statewide significance. VDOT develops a vision plan for the corridors and addresses needs and improvements on this level. The plan will tell a story through an economic lens, particularly on the freight side. It will align State goals with the MAP-21/FAST ACT national goals. VDOT also is looking at truck parking, working with the I-95 Corridor Coalition and the I-81 Corridor Coalition. The State shares Origin and Destination (OD) data with and provides technical assistance to the MPOs. They have had difficulty finding data related to locations of manufacturing and distribution. VDOT also is analyzing truck parking needs and finding that estimating the future need is challenging.

### New Jersey Department of Transportation (NJDOT)

Nicole Minutoli reported that New Jersey is updating its freight plan, which will be completed in 2017. They started with a review of the National Highway Freight Network to determine if they need to make changes. Their Freight Advisory Committee includes MPOs, FHWA, Port Authority of New York and New Jersey (PANYNJ), other ports, and additional stakeholders. NJDOT is creating a freight management system that will identify (but not prioritize) key freight projects, and are developing freight performance measures. The freight plan will have a multimodal focus—they know that larger ships are coming to the ports and want to assess how this will affect freight. Will it be on rail, trucks, both? They also are collaborating with the private sector and asking them for their ideas.

Paul Truban also reported for New Jersey. He said the State has been doing freight planning since 2003. Earlier plans, beginning in 2007, contained policy level recommendations. NJDOT completed a plan in 2012 that focused on key freight corridors and developed problem statements for each area to eventually move projects into the capital program. They are now working on corridor plans; not reinventing previous work, but building on existing resources. NJDOT also implemented an electronic screening system, which is a weigh station truck by-pass system. Trucks now back up onto the mainline. Under e-screening, carriers with a good safety record can bypass weigh stations. Carriers pay to enroll in the system. From a megaregional perspective, e-screening regulations differ from State to State and should be coordinated.

### West Virginia Department of Transportation (WVDOT)

Matt Mullenax reported on behalf of WVDOT. The State's first rail plan was approved in 2013. It addresses both freight and passenger rail systems. WVDOT is now developing their first freight plan, which is expected to be completed by spring 2017. As part of this effort, WVDOT is strengthening relationships with the freight industry through outreach activities. The Department





conducted a freight survey in late 2015 to gather input that was used to establish priorities and identify needs, and held a roundtable forum to identify freight projects and prioritization criteria. The membership of the Freight Advisory Committee includes the MPOs in West Virginia. WVDOT is a member of the I-81 Corridor Coalition, along with five additional States. These States work together to share and coordinate operating and capital plans and freight, truck, and rail study planning. WVDOT is coordinating with Virginia and Maryland on improvements to I-81 that cross State borders. The Interstate serves as a significant freight and commercial corridor. Megaregional planning is an important topic to West Virginia and neighboring States due to growth in distribution centers and rail-truck terminals. Most of the tonnage moving within the I-81 corridor is pass-through freight. The private sector is not interested in boundaries.

## **THE EMERGENCE OF CONNECTED/AUTONOMOUS VEHICLES IN THE MEGAREGION**

Roger Cohen, Pennsylvania DOT Policy Director, spoke about PennDOT's connected and autonomous vehicle activities, legislation, and policy. PennDOT established an Autonomous Vehicles Testing Policy Task Force to guide PennDOT when drafting autonomous vehicle policy. PennDOT chairs the task force, and membership includes State, Federal, and private-industry officials such as FHWA, AAA, Carnegie Mellon University, and Uber Technologies. Pennsylvania lawmakers are working on legislation that aims to establish the Commonwealth as a national leader in autonomous vehicle testing. The Task Force will release the guidance in early December. It is the result of months of collaboration among Task Force members.

Mr. Cohen discussed the numerous safety benefits predicted to occur once autonomous vehicles are implemented. He stated that the development of highly automated vehicles is progressing more rapidly than most people anticipated even a few months ago. Beyond safety, additional benefits include increased mobility options, more efficient operation infrastructure, and reductions in green-house gas and other emissions. New challenges and opportunities will also arise, including personal privacy and cybersecurity. Our formal regulatory process is too slow and inflexible to keep pace with the fast-changing technology, which is the primary reason for creation of the Task Force.

Mr. Cohen also discussed a May 2016 FAST ACT grant application submitted to U.S. DOT by Delaware, Connecticut, New Hampshire, Pennsylvania, Vermont, and the I-95 Corridor Coalition for development of alternative, user-based, transportation funding mechanisms. This grant will enable PennDOT and the other States to develop a Mileage Based User Fee (MBUF) Pilot Program. Under an MBUF system, drivers pay a fee based on actual miles driven, rather than how much fuel their vehicles use. Proponents say this fee more accurately reflects the cost of highway use. The transition from the gas tax to MBUFs was recommended by the National Surface Transportation Infrastructure Financing Commission, as well as others. A multistate approach is preferred in the Mid-Atlantic and Northeast regions due to the small size of many of the States and the large volume of cross-border travel.

## **FAST AND FREIGHT—NEW OPPORTUNITIES FOR EXPANDING THE CONCEPT OF MEGAREGIONS**

Tamiko Burnell of the FHWA Office of Freight Management and Operations and Spencer Stevens of the FHWA Office of Planning presented an overview of the FAST ACT, focusing on the National Highway Freight Program (NHFP), State Freight Plan Requirements, and Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies (FASTLANE) Grants.





The presentation began with an overview of important facts regarding the NHFP, funding, and eligible project types. It was noted that States have broad flexibility in addressing the trends, needs, and issues of their freight systems. The presenters described in detail the designation of the Primary Highway Freight System (PHFS), Critical Rural Freight Corridors (CRFC), and Critical Urban Freight Corridors (CUFC). It was stressed that there is no deadline for designating and certifying CRFCs and CUFCs. These designations may occur at any time, and may be full or partial designations of the total CUFCs or CRFCs mileage assigned to the State. The two types do not need to be designated at the same time. Designations and certification may be provided to FHWA on a rolling basis. It is important, however, that these decisions be data driven, and that selection criteria feature collaboration with neighboring States.

An important consideration when forming a FAST ACT-compliant State Freight Plan is the inclusion of representatives from critical commodities on the designated Freight Advisory Committee, which requires consultation during the formation of the plan. Other requirements include the identification of significant freight systems, and a discussion of how the plan will improve the ability of the State to meet national multimodal freight policy goals. The State Freight Plan also should feature descriptions on how the State will incorporate innovative technologies and operation strategies that improve the safety and efficiency of freight movement, and a description of improvements that may be required to reduce system deterioration due to heavy vehicle usage. A consideration of any significant congestion or delay caused by freight movements should be included, and a list of priority projects provided. This list should include a description as to how funds would be invested and matched for these projects.

Ms. Burnell encouraged those working on State Freight Plans to utilize their FHWA Division Office as an initial point of contact, and reminded participants that great planning facilitates great implementation. As best practices and exemplary plans are identified, FHWA will facilitate instructional webinars or facilitate additional question and answer sessions with those entities.

## **DISCUSSION ON FREIGHT AND RAIL CHALLENGES FROM THE METROPOLITAN PLANNING ORGANIZATION PERSPECTIVE**

Ted Dahlburg from DVRPC and Barbara Nelson from the Richmond Regional Transportation Planning Organization discussed megaregional freight planning issues from the metropolitan level. Each speaker provided details about how their MPO incorporates freight into the transportation planning process and associated stakeholder coordination efforts. Both MPOs have established partnerships in their regions to inform freight planning efforts. Partners include FHWA, Maritime Administration, Environmental Protection Agency, I-95 Corridor Coalition, State DOTs, other MPOs, academia, and the ATRI Research Advisory Committee.

Ms. Nelson discussed investments totaling \$700 million that are being made in terminals at the Port of Virginia. More than 55 percent of the nation's consumers and manufacturers are within 750 miles of the Richmond and Hampton Roads areas. These two regions are home to 23 colleges and universities, 11 two-year institutions, and a large retiring military workforce. Approximately 75 percent of Virginia's population is in the "urban crescent" along I-95 and I-64, from the Northern Virginia region through Richmond and Hampton Roads area. Thus, infrastructure investment along I-95 and I-64 and rail improvements inside the Richmond region as well as throughout Virginia and other States are important to the Megaregion. Ms. Nelson discussed the Atlantic Gateway project, which is a multimodal suite of projects focused on the I-95 corridor. The project recently received a \$165 million FASTLANE grant that will leverage \$565 million in private investments and \$710 million in other transportation funds, making it one



of the biggest single programs to ease travel congestion in the Mid-Atlantic region. Improvements will enhance passenger and freight rail along the corridor, improve reliability and capacity on the East Coast’s rail network, increase bus service, and extend I-95 express lanes.

Mr. Dahlburg addressed how private businesses can help MPOs in several ways. Strategies for freight to be a “good neighbor” include developing truck access routes, identifying truck parking locations and encouraging use, creating incident management programs, expanding sustainability measures, and hiring locally. He cited MPO best practices in the megaregion, including overnight truck parking in the Baltimore region, downtown deliveries in the D.C. region, freight data use in Wilmington, supply chain profiles developed by the North Jersey Transportation Planning Authority, and the Freight Advisory Committee at the Lehigh Valley Planning Commission. He discussed the Philadelphia Delivery Handbook, which was developed to address delivery issues in the city, and a management system for signage and regulations. The key takeaways from this discussion are that MPOs are performing valuable freight planning activities, and agencies in the Mid-Atlantic Megaregion share tools and best practices to enhance planning.

## **PART 3—MOVING FORWARD**

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### **KEEPING THE CONVERSATION GOING—DISCUSSION OF NEXT STEPS AND ACTION ITEMS**

In this final session, Catherine Ross reviewed discussions from the day and posed several questions to the participants to emphasize key takeaways.

#### **What have we learned today about common interests and needs?**

- The 3 Cs (Communication, Collaboration, and Consultation) mentioned by Barry Seymour from DVRPC are necessary to maintain cooperation across jurisdictional boundaries. An example is Delaware’s coordination with Virginia and Maryland on their State freight plan.
- Agencies need to continue to bring private industry to the table (e.g., participation in Freight Advisory Committee meetings). Public agencies need to understand the needs of private-sector freight companies. Private industry and academic stakeholders can help agencies think outside of the box.
- Agencies face an educational and professional capacity issue. Few interns and graduating students have freight planning expertise. Improved coordination between practitioners and academia is needed to address this issue.
- A consistent policy approach is needed from U.S. DOT with the new administration to continue the good freight planning work that already is underway, and to make the megaregion voice heard.
- We need to identify ways to highlight benefits that accrue to States and regions other than where infrastructure investments are made.
- Federal grant opportunities should continue to provide additional points for applications that emphasize multijurisdictional cooperation among entities and organizations.
- Agencies need to have information about quantifying the physical impacts automated vehicles will have on infrastructure (e.g., could capacity of bridge loads change with platooning automated heavy-duty vehicles?).



### What needs exist and opportunities are available to share data and resources?

- There is a need for a consolidated way to identify best practices (e.g., Web site).
- There is a need for better planning information for communities in developing freight regions (e.g., I-78 Corridor), particularly communities with developing freight activity that want to get ahead of issues.
- A common source of freight data will enhance cooperative planning across jurisdictional boundaries. There is a need to focus on information and data sharing, and to convene practitioners to talk about how they use data sets. In New Jersey, the State DOT and MPOs meet quarterly to discuss issues, including data sources and uses.
- GIS professionals can develop creative ways to identify and present information to improve planning and messaging. Practitioners should share these methods.
- Share best practices on understanding commodity flows within and among regions.
- Public agencies should “flex their muscles” when purchasing data from private sources, and insist on being able to share the data.
- Coordination between jurisdictions is necessary to enhance oversized/overweight vehicle electronic screening and permitting.

### CONCLUSION AND CLOSING REMARKS

During the Workshop, the Mid-Atlantic Megaregion Workshop participants, hailing from the States of Delaware, Maryland, Pennsylvania, New Jersey, Virginia, West Virginia, and the District of Columbia, discussed current freight planning efforts, new transportation technologies, and opportunities for multijurisdictional coordination. The speakers addressed megaregion perspectives from public and private organizations. From the trucking industry perspective, truck parking and driver distraction are important issues public agencies could address on a megaregional scale.

Participants learned how the I-95 Corridor Coalition addresses freight mobility challenges through regional cooperation among member States. A representative of each State in the Megaregion reported on freight challenges and current planning activities. This allowed the participants to gain familiarity with efforts that are underway and identify common issues among the States. Participants also learned about automated and connected vehicle initiatives in Pennsylvania and their potential applicability to the Mid-Atlantic Megaregion. FHWA provided an overview of freight provisions in the FAST ACT, as well as the FASTLANE Grant program. FHWA staff emphasized that great planning facilitates great implementation. Staff from the Philadelphia and Richmond MPOs discussed freight and rail challenges and activities from the metropolitan perspective. These MPOs, as well as others throughout the Megaregion, are performing freight planning activities that are important to their regions as well as to the Megaregion as a whole.

Dr. Ross summarized the key takeaways, common interests, and needs that were identified and discussed in the Workshop. Communication, collaboration, and consultation are necessary to maintain cooperation across jurisdictional boundaries. Participants identified the possible action items and next steps for Megaregion agencies and stakeholders, listed below.



### Action items and next steps for participants of the Mid-Atlantic Megaregion Workshop:

- Continuing coordination of Mid-Atlantic Megaregion members.
- Establish a regular communication forum and protocol.
- Establish liaisons among States and other entities.
- Identify and share common challenges and best practices.
- Identify and apply consistent freight performance measures.
- Coordinate Statewide Freight and Long-Range Plans.
- Share data.
- Coordinate permit procedures and regulations for electronic screening for trucks.

Barry Seymour from DVRPC and Christopher Lawson from the FHWA gave closing remarks and thanked participants for attending the Workshop.





## APPENDIX A: WORKSHOP AGENDA



### Part 1 – Background / Setting the Stage

**Purpose Statement:** This workshop brings together local, state, and Federal transportation officials to identify how states, MPOs, and other planning partners can better connect with each other, coordinate statewide freight and rail plan development, and identify common approaches to address traffic congestion and aging infrastructure at a megaregion level.

**8:00-8:30 Check-In/Meet and Greet**

**8:30-8:50 Welcome/Introductions**

Secretary Leslie Richards, PennDOT  
 Martin Knopp, FHWA Director of Field Services East  
 Barry Seymour, Executive Director, Delaware Valley Regional Planning Commission

**8:50-9:20 Starting the Conversation: Are We Ready for the Rise of the Megaregion?**

Catherine Ross, Director, Center for Quality Growth and Regional Development,  
 Georgia Institute of Technology

**9:20-10:05 Megaregional Collaboration: Long-Term Trends and Demands in the Mid-Atlantic**

DeLania Hardy, Executive Director, Association of Metropolitan Planning Organizations  
 Jeffrey Short, Senior Research Associate, American Transportation Research Institute

**10:05-10:40 Mid-Atlantic Megaregional Freight Activities**

Marygrace Parker, Freight, Mobility, Safety & Security Coordinator, I-95 Corridor Coalition

**10:40-11:00 BREAK**





## Part 2 – Current and Near-Term Initiatives

### 11:00-12:30 Taking Action on Freight: A Focus on Statewide Activities

Facilitator: Catherine Ross, Director, Center for Quality Growth and Regional Development, Georgia Institute of Technology

### 12:30-1:45 WORKING LUNCH

#### A Panel Discussion on the Emergence of Connected/Autonomous Vehicles in the Megaregion

Roger Cohen, Policy Director, PennDOT  
Trish Hendren, Executive Director, I-95 Corridor Coalition

### 1:45-2:00 BREAK

### 2:00-2:30 FAST and Freight – New Opportunities for Expanding the Concept of Megaregions

Tamiko Burnell, Transportation Specialist, FHWA Office of Freight

### 2:30-3:30 Open Discussions on Freight and Rail Challenges

Ted Dahlburg, Manager, Office of Freight and Aviation Planning, Delaware Valley Regional Planning Commission  
Barbara Nelson, Director of Transportation, Richmond Regional TPO

### 3:30-3:40 BREAK

## Part 3 – Moving Forward

### 3:40-4:45 Keeping the Conversation Going – Discussion of Next Steps/Action Items

Moderator: Catherine Ross, Director, Center for Quality Growth and Regional Development, Georgia Institute of Technology

### 4:45-5:00 Closing Remarks

Barry Seymour, Executive Director, Delaware Valley Regional Planning Commission  
Christopher Lawson, FHWA DC Division Administrator

### 5:00 ADJOURN





## **APPENDIX B: MID-ATLANTIC WHITE PAPER**

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The Mid-Atlantic White Paper is included in the following pages.

December 2016



# Mid-Atlantic MEGAREGION



U.S. Department of Transportation  
Federal Highway Administration

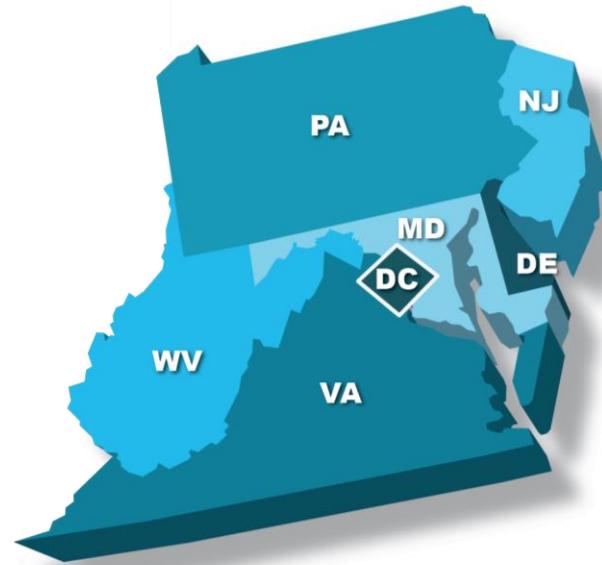




## INTRODUCTION

This paper describes megaregion-level transportation infrastructure planning considerations linking the six Mid-Atlantic States, including Delaware, Maryland, Pennsylvania, New Jersey, Virginia, and West Virginia, and the District of Columbia. The region includes major cities that attract large populations and employment. This area comprises critical highway infrastructure, passenger and freight rail, and seaports that go beyond State and agency boundaries to support the national economy. Effective transportation infrastructure, which links together neighborhoods, towns, and cities to regions—and regions to megaregions—is essential to economic growth in a global economy.

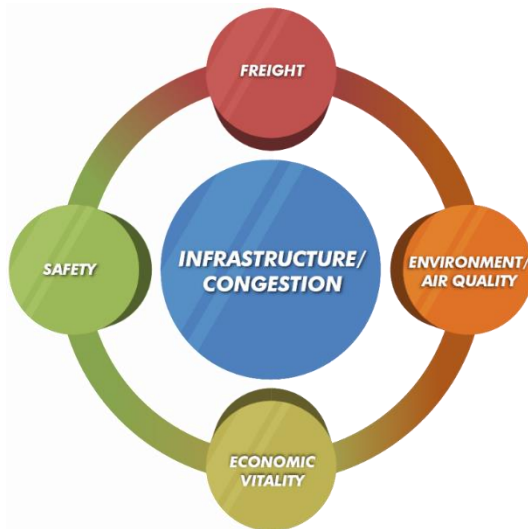
At workshops conducted around the country local, State, and Federal transportation officials are joining together to identify how States and MPOs can better connect with each other, coordinate statewide freight and rail plan development, and identify common



**Figure 2. Map. Mid-Atlantic Megaregion.**  
(Source: Cambridge Systematics, Inc.)

approaches to address traffic congestion and aging infrastructure at a megaregion level.

Megaregions are characterized as networks of urban centers and their surrounding areas, connected by existing economic, social, and infrastructure relationships.<sup>1</sup> Transportation infrastructure provides the structure within and between cities and metropolitan areas in the region. There are 50 Metropolitan Planning Organizations in the Mid-Atlantic Megaregion, each of which plays an important role with regard to coordinated, comprehensive transportation planning activities.



**Figure 3. Flow chart. Megaregion framework.**  
(Source: U.S. DOT)

## IMPORTANCE OF MEGAREGIONS

Potential benefits of megaregions planning include enhancing economic development across jurisdictional boundaries, sharing

<sup>1</sup> Ross et al., 2009.

best practices, promoting the collection, sharing, and use of data and information, and addressing projects or services that enhance the mobility of people and goods. A megaregional approach provides opportunities to identify common tracking and performance metrics to understand regional needs and challenges and to meet peer staff and partners from other States and agencies to advance coordination.

Population growth and expansion of economic activities within the region already are placing stress on roadways, airports, transit, and shipping infrastructures. Key aspects of planning for megaregions include strategic planning, technical analysis, coordinating funding mechanisms, and identifying common approaches to address congestion at a megaregional level. The megaregion approach offers a framework for interjurisdictional cooperation, rather than State or local government competition for funds and projects.<sup>2</sup>

### POPULATION

The total population of the Mid-Atlantic Megaregion was just under 40 million people in 2015.<sup>3</sup> Pennsylvania, New Jersey, and Virginia are the most populous States, with large concentrations around the urbanized areas of northern New Jersey, Philadelphia, and Washington, D.C. The D.C. region currently is the fastest growing metropolitan area in the Megaregion, and in 2015 passed the Philadelphia region in total population.<sup>4</sup> After Washington D.C., the next fastest growing metropolitan area in the Mid-Atlantic is the Richmond, Virginia region. Since the trends of population and economic growth will continue in the future, a strategic coordinated approach to investment in transportation infrastructure is important.

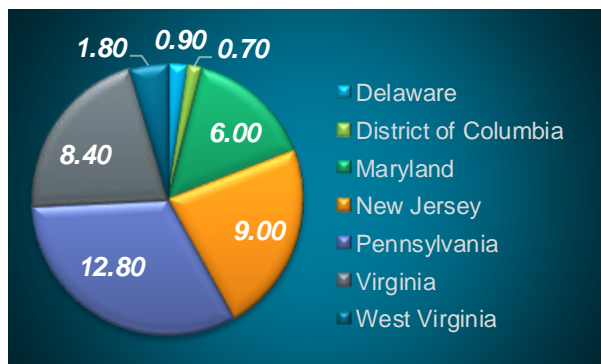


Figure 4. Pie chart. Population (millions of people).

(Source: US Census Bureau, 2015.)

### EMPLOYMENT

The Mid-Atlantic's strongest sectors are financial and business services, government, healthcare, biomedicine, food processing, and energy. For example, Maryland is home to the National Institutes of Health, Food and Drug Administration, Johns Hopkins University, and over 350 biotechnology firms. New Jersey is expanding healthcare companies, and Pennsylvania has more than 2,300 pharmaceutical, biotechnology, and medical device companies in the State.

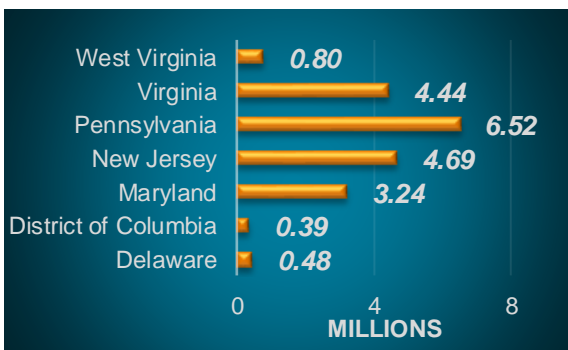


Figure 5. Bar graph. Labor force population.

(Source: US Census Bureau, 2015.)

<sup>2</sup> Ross et al., 2009.

<sup>3</sup> U.S. Census, combined regional population 39,612,200 in 2015.

<sup>4</sup> U.S. Census, 2015.



With the presence of oil and gas reserves in the Marcellus and Utica shale formations, Pennsylvania is the center of the energy boom in the Mid-Atlantic. The abundance of oil and gas also is creating jobs in those industries in Pennsylvania and New Jersey that support the energy sector, and leading to a rise in chemical manufacturing due to cheap shale gas that is used for fuel as well as feedstock.

## MAJOR TRANSPORTATION FREIGHT FLOWS



Freight traffic relies heavily on rail and roadway connectivity, which is challenged by an aging infrastructure that has expanded more slowly than freight volumes have increased. Major freight flows include the I-95 corridor, connecting the Ports of New York/New Jersey, Delaware Bay, Baltimore, and Virginia; the I-81 Corridor bisecting the region along the Appalachian Mountains and the I-80 and I-76 corridors connecting the Mid-Atlantic Region to the Midwest. Within the region, freight nodes are areas with concentrated freight activity such as port, trucking, rail, manufacturing, warehouse, and distribution and support facilities.

**Figure 6. Map. Rail networks.**

(Source: Northeast Corridor Commission.)

## HIGHWAYS

Nationwide, Vehicle Miles Traveled (VMT) have increased significantly due to increased average personal trip length, population growth, decreased vehicle occupancy, lack of sufficient transit services, and longer commutes due to highly dispersed regional development patterns. The I-95 corridor is projected to experience a 208 percent increase in demand for freight capacity by 2035 from intraregion commodity movement alone. By 2035, the amount of freight moved by truck is projected to decrease slightly to 86 percent of total commodity flows (from more than 90 percent as of 2002), while the shares of freight movement by pipeline and water increase.<sup>5</sup> The Federal Highway Administration expects that future transportation revenues will only be able to maintain current roadways and not add significant capacity.<sup>6</sup> Understanding that the economic forces driving freight demand over the I-81 corridor transcend individual State boundaries, the I-81 partner States are formally cooperating to promote efficient goods movement through the corridor, improve the safety of the traveling public and encourage economic development.<sup>7</sup> In the Mid-Atlantic Megaregion, there are 313,043 miles of public roads, transporting passengers and freight in, out, and through the region.

<sup>5</sup> A 2040 Vision for the I-95 Coalition Region, Cambridge Systematics, 2009.

<sup>6</sup> Cambridge Systematics, 2005.

<sup>7</sup> I-81 Multistate Corridor Study, Cambridge Systematics, 2012.



## RAILROADS

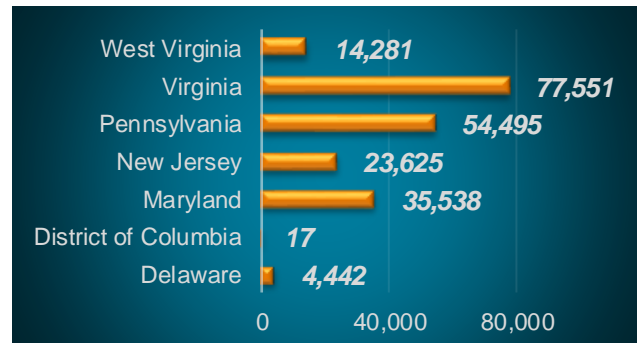


**Figure 7. Map. Railway corridors.**  
(Source: I-95 Corridor Coalition.)

The Northeast Corridor (NEC) is among the most heavily utilized rail networks in the world. The NEC is the nation’s only high-speed intercity rail line, hosts dozens of commuter lines, and provides freight access to major ports and local industries. The NEC moves more than 260 million passengers and 14 million car miles of freight each year.<sup>8</sup>

In 2009, the I-95 Corridor Coalition led a series of Mid-Atlantic Rail Operations (MAROps) studies with five Mid-Atlantic States (Delaware, Maryland, New Jersey, Pennsylvania, and Virginia), and three railroads (Amtrak, CSX, and Norfolk Southern) to document the condition and performance of the rail network and to understand the impact of rail choke points on rail freight transportation and the economy of the region. The effort recommended a 20-year, \$6.2 billion program of 71 rail capacity and operational improvements to keep pace with projected demands—45 percent of railroads will be under capacity, 25 percent at or near capacity, and 30 percent over capacity by 2035.<sup>9</sup>

Railroads connect distribution centers, ports, and cities within the Megaregion, primarily transporting coal, raw materials, aggregates, and fuel. CSX and Norfolk Southern (NS) are the primary class I freight railroads serving the region. Virginia and Pennsylvania receive the most shipments and tonnage. CSX is building the “National Gateway,” a system to connect east coast ports with the Midwest manufacturing facilities in Ohio, requiring infrastructure improvements to allow for double-stack container movements. Norfolk Southern is completing its three-year Heartland Corridor project to cut a double-stack path through the Appalachian Mountains in Virginia and West Virginia, on the way to a modern intermodal terminal at Columbus, Ohio.



**Figure 8. Bar graph. Freight rail shipments (in thousands of tons).**  
(Source: Bureau of Transportation Statistics, 2012.)

## SEAPORTS

The Atlantic coast seaports facilitate freight flow and international trade for the long-established and populous Northeast coast. Containerships and containerized cargo comprise the bulk of vessel calls and most of the vessel value at these seaports.

<sup>8</sup> I-95 Corridor Coalition, 2014.

<sup>9</sup> A 2007 study by Cambridge Systematics.





Atlantic coast U.S. seaports have prepared for the increase in cargo that is expected after the recent expansion of the Panama Canal. East coast port preparations included installation of larger cranes and dredging channels to accommodate container ships with nearly two and one-half times the capacity of current Panamax vessels, the largest ships that now transit the canal. Commodities transiting the canal to the Atlantic ports include auto parts, bananas, chemicals, canned and frozen fish, and pulpwood, among others. New York/New Jersey and Virginia are the two largest container ports in the region.



Figure 9. Bar graph. Port capacity (in thousands of DWT tons).

(Source: U.S. DOT Maritime Administration, 2015)

Seaports often specialize in cargo handling by vessel type. For instance, Baltimore is the leading port for roll-on, roll-off (RO/RO) vessels and automobile imports and exports. New York/New Jersey followed by Philadelphia are the leading ports for tankers. The Port of New York/New Jersey is the largest Atlantic coast U.S. seaport in terms of total tonnage and the third largest in the country in terms of intermodal TEU containers handled.

## INFRASTRUCTURE CHALLENGES

The nation's highway infrastructure is now more than 50 years old and rail infrastructure is much older. For example, the railroad swing bridge that failed in 2012 in New Jersey, leading to a train derailment, was built in 1881. Even with the modest increases in rail capacity proposed by the NEC Infrastructure Master Plan in 2010, demand on 186 miles of the 457-mile NEC are expected to exceed 100 percent of available track space in 2030. The demand for transportation will continue to rise, which will lead to high levels of congestion, and additional demand is likely to increase delays even further. If VMT grew to keep pace with population growth, the region would still require new highway lane-miles to maintain today's ratio of travel demand to available roadway space. The I-95 Corridor Coalition estimates that, without capacity improvements, the number of highway miles operating at 27 mph or less during peak periods will nearly triple by 2035.<sup>10</sup>

## MEGAREGION CHALLENGES

The concept of megaregions provides a new focus on identifying, prioritizing, and addressing mobility challenges and opportunities. However, planning and political boundaries do not account for natural resource extents or political, economic, and cultural relationships within regions, which may form a foundation for addressing mobility needs and priorities. Critical transportation needs do not respect these formal boundaries of States, MPOs, and public transit service areas. Planning across these boundaries to address freight and passenger transportation needs is a major challenge, receiving increasing attention at Federal, State, and local levels. Ideally,

<sup>10</sup> A 2040 Vision for the I-95 Coalition Region, Cambridge Systematics, 2009.



megaregions should be defined with a balance of planning and political boundaries along with the economic, environmental, and cultural links within and between regions.

### **MEGAREGION STUDIES AND PLANS**

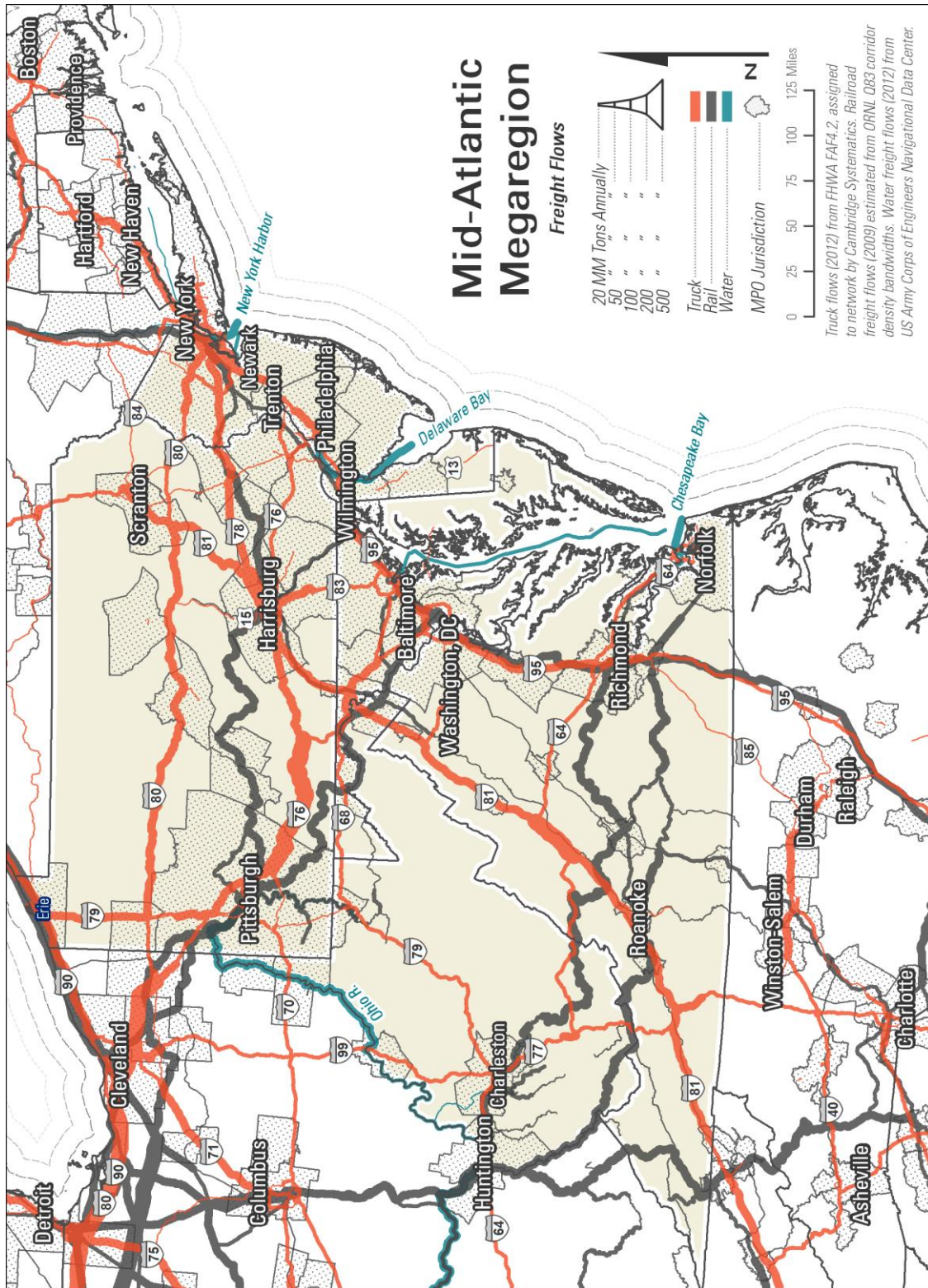
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- Metropolitan Planning Organizations and Transportation Planning for Megaregions (Volpe, 2014).
- Megaregions: Literature Review of Organizational Structures and Finance of Multijurisdictional Initiatives and the Implications for Megaregion Transportation Planning in the U.S. (Dr. Catherine L. Ross, Georgia Institute of Technology, 2011).

### **MID ATLANTIC REGION FREIGHT AND RAIL PLANS**

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- DDOT Freight Plan (2014).
- DDOT State Rail Plan (2015) (in progress).
- Delaware Freight & Goods Movement Plan (2004).
- DeIDOT State Rail Plan (2011).
- Delaware Hazmat Plan (2012).
- Maryland Statewide Freight Plan (2010)  
Strategic Goods Movement Plan (2015).
- Baltimore Freight Study (1997).
- Mid-Atlantic Rail Operations Study; Phase I Report (2002).
- Mid Atlantic Rail Operations Study; Phase 2 Report (2009).
- New Jersey Statewide Freight Plan (2007).
- New Jersey Statewide Rail Plan (2012).
- Pennsylvania Comprehensive Freight Movement Plan (in progress).
- Pennsylvania Intercity Passenger and Freight Rail Plan (2010).
- Pennsylvania Keystone West High Speed Rail Study (2015).
- DVRPC Goods Movement Plan (2004) and Task Force (ongoing).
- Virginia Statewide Freight Plan Phase I (2008)  
and Phase 2 (2010).
- Virginia Statewide Rail Plan DRPT (2013).
- West Virginia Statewide Freight Plan (2015) (ongoing).



**Figure 10. Map. Mid-Atlantic megaregion freight flows.**  
(Source: Cambridge Systematics, Inc.)



## APPENDIX C: KEY CONTACTS

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